Preview: 1998 MRS Spring Meeting

San Francisco, California • April 13–17, 1998

Meeting Chairs:
John A. Emerson
Sandia National Laboratories
Ronald Gibala
University of Michigan
Caroline A. Ross
Massachusetts Institute of Technology
Leo J. Schowalter
Rensselaer Polytechnic Institute

The 1998 MRS Spring Meeting program covers a broad spectrum of materials research, with a strong component on electronic materials and devices. The 32 technical symposia, some with joint sessions, follow technological developments from fundamentals such as crystal growth, epitaxy, and defect behavior through processing of semiconductors, to metallization, packaging, and reliability. The meeting, to be held at the San Francisco Marriott April 13–17, will address both experimental and theoretical aspects of materials. The meeting is rounded out with sessions on characterization, biomaterials, magnetic and optical materials, structural porous materials, hybrids, and other topics. Over 2,400 poster and oral presentations are planned, 400 more than scheduled for the 1997 Spring Meeting.

Defects and impurities are important players in semiconductor performance. Symposium D specifically focuses on Defect and Impurity Engineered Semiconductors and Devices. Symposium EE, Silicon Front-End Technology—Materials Processing and Modeling, covers defects, diffusion, and implant technology in this important portion of silicon processing. A new symposium focuses on a significant yet often elusive impurity, hydrogen, looking both at its role in semiconductors and metals, and how to measure and study its behavior. This symposium (H) begins with a plenary session Monday morning 8:30 to 10 a.m. with two talks, one covering hydrogen in metals on condensed carbon and the second on theory of hydrogen in semiconductors. The rest of this symposium covers ways to detect hydrogen, its effects as an impurity, and useful applications of hydrides for achieving applications as diverse as switchable optical properties and battery operation.

Also fundamental to materials science are diffusion and epitaxial growth. Symposium Z, Diffusion Mechanisms in Crystalline Materials, looks at fundamental diffusion processes in intermetallics, quasicrystals, semiconductors, and other materials. It also examines effects of pressure on diffusion. Symposia AA and FF focus on epitaxy, the first examining metallic systems and the second examining Si-based heterostructures. Growth of metals on metals is an important problem to a number of industries, such as catalysis and magnetic recording. The process is complicated because film growth is a nonequilibrium phenomenon, so kinetic models must be used as well as thermodynamic models to describe film growth and evolution. Another approach to microstructural evolution will be given in Symposium BB, focusing on computational and mathematical models.

The continued miniaturization of device circuits has led to various challenges for processing semiconductor devices, leading to new fields of study. Symposium I, Advanced Interconnects and Contact Materials and Processes for Future ICs, begins with a full day of invited presentations covering interconnect frontiers, for example looking at interconnection limits on 21st century gigascale integration, copper interconnect technology, scaling issues, and optical interconnects. Likewise, development is moving quickly in the field of Low-Dielectric Constant Materials and Applications in Microelectronics II, Symposium E. A practical technique that quickly gained use throughout the semiconductor industry is chemical-mechanical polishing, which is covered in Symposium Q. Rapid thermal and laser processing also have an important place in materials processing, as represented in Symposia W and Y. Symposium Y, Advances in Laser Ablation of Materials, will hold a panel discussion on Tuesday afternoon looking back 10 years to the beginning of pulsed laser deposition of high-temperature superconductors, and then looking to future directions.

After a device is created, it still needs to be packaged. Such issues will be covered in Symposium J. Challenging reliability issues such as electromigration will be addressed in Symposium K. Another reliability area presented at this meeting is Reliability of Photonics Materials and Structures, Symposium DD. This symposium provides a morning of invited presentations on Monday giving a review of reliability issues relating to waveguide components, packaged devices, and wiring for optical devices.

Symposium B, Flat-Panel-Display Materials and Large-Area Processes, meshes with several other symposia: One is the application of fundamentals developed in Symposium A, Amorphous and Microcrystalline Silicon Technology. Another display technology is covered in Symposium G, Science and Technology of Organic Electroluminescent Devices. Light-emitting diodes made of these materials offer a path to low-cost, large-area emissive displays by virtue of their simple fabrication techniques. Also connected to flat-panel displays is Symposium C, Materials Issues in Vacuum Microelectronics.

Electronics also moves beyond silicon. Symposium F focuses on Wide-Bandgap Semiconductors for High Power, High Frequency and High Temperature. This symposium covers materials and device characteristics of carbides and nitrides, such as SiC and GaN, used in electronics.

Interest is growing in magneto-optical materials that can be integrated into a broad range of photonic devices, for example, in optoelectronic integrated circuits and magneto-optical recording media. Symposium M examines materials, processing, and devices in this area. Symposium L, Materials for High-Density Magnetic Recording, will examine phenomena such as giant and colossal magnetoresistance, magnetic properties of thin films, and also will look at the friction and corrosion properties of the head/disk interface.

A cluster of symposia (S–V) focuses on analysis techniques covering Nanoscale Materials Characterization Using Scanning Probes, Fundamentals of Nanoindentation and Nanotribology, Electron Microscopy of Semiconducting Materials and ULSI Devices, and the Application of Synchrotron Radiation Techniques to Materials Science. Additionally, Symposium N, Microelectromechanical Structures for Materials Research, shows how MEMS devices can be used to measure materials properties.

Symposium P, Chemical and Pyrolytic Routes to Nanostructured Powders and Their Industrial Application, starts Monday morning with a series of invited speakers giving an overview of nanoparticle technology. Presentations will describe various ways to form powders, for instance via flame aerosol synthesis, precipitation, and hydrothermal chemical processing. Other presentations in this

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introductory session will examine compaction stress and behavior of aggregates.

Symposium R on Porous and Cellular Materials for Structural Applications examines manufacture and mechanical behavior of metal foams and other high stiffness-to-weight materials.

Symposium O, Hybrid Materials, looks at property-driven design, preparation, and characterization of nanoscale inorganic-organic interpenetrating networks and submicron particle/polymer composites. These materials can be used for electronic, optical, biomedical, and composite applications. This symposium closes with a panel discussion on Friday afternoon to look at opportunities in the field of inorganic-organic hybrids.

Symposium CC, Biomaterials Regulating Cell Function and Tissue Development, highlights the synthesis, characterization, and fabrication of materials and devices which are designed to control cell behavior and tissue development. The focus is both to understand biological processes and to help regenerate deficient tissue. The program includes the presentation of the 1998 Outstanding Young Investigator Award recipient (see next section).

Special Events

A plenary session is scheduled for Monday evening at 6 p.m. John P. Lockwood, a consulting volcanologist who is president and chair of the board of Geohazards Consultants International, Inc., will give the plenary lecture on "Volcanoes: The Ultimate Materials Source." Also during the plenary session Anne Mayes (Massachusetts Institute of Technology) will be presented with the Outstanding Young Investigator Award, and Graduate Student Awards will be presented.

Seven overview lectures serving as part of the tutorial program will be integrated into the symposia. Also, Symposium X, Frontiers of Materials Research, will present eight authoritative reviews for nonspecialists during noontime sessions. Presentations will focus on historical themes in semiconductor materials and devices, covering some of the early work on materials science and the foundations of germanium and silicon electronics, including the growth of large single-crystal silicon. They will also trace the origins of semiconductor lasers and examine the progress in semiconducting and metallic polymers. Another presentation will follow the history of silicon chip interconnects from aluminum to copper.

A major exhibit encompassing the full spectrum of equipment, instrumentation, products, software, publications, and services will be held Tuesday through Thursday, adjacent to the technical meeting rooms. Meeting participants are invited to attend a reception on Tuesday evening from 5:00–6:30 p.m. in the exhibit area.

The meeting includes major poster sessions Tuesday through Thursday nights, plus in-room posters for several symposia. Awards of $500 will be given to the presenting author of the most outstanding poster(s) as selected by the Meeting Chairs at each evening's poster session. Posters will be judged on their technical content, overall appearance, graphic excellence, and presentation quality.

A mixer is planned for graduate students and members of MRS University Chapters. Also, University Chapter officers and faculty advisors are invited to attend a meeting of MRS University Chapter representatives to compare notes on recent activities and brainstorm on new projects and issues of common concern.

A National Science Foundation (NSF) Seminar on materials research support is scheduled for Tuesday, 5:30–7:00 p.m., followed by a drop-in session Wednesday, noon–2:00 p.m for informal discussions with program directors from NSF's Division of Materials Research. The seminar will include presentations by NSF staff and a question-and-answer period about NSF programs, proposal submission, and proposal evaluation.

For job seekers, a job center will be available Tuesday through Thursday.

The 1998 Spring Meeting program will be available on the MRS Website (http://www.mrs.org/); to access it, click on "Meetings," then on "1998 Spring Program." For additional copies of the program to share with colleagues, call MRS Headquarters: 412-779-3003, or e-mail: info@mrs.org. The deadline to preregister for the meeting is Friday, March 27. See the following pages for a matrix of symposia sessions, highlights of special events, profiles of exhibitors, and other information.

MRS

MRS 1998 Spring Meeting
San Francisco, CA

Outstanding Young Investigator Award

Anne M. Mayes, Professor
Masssachusetts Institute of Technology

"Tailoring Polymer Surfaces for Controlled Cell Behavior"

Award Presentation
Monday, April 13, 6:00 p.m.
Salon 7, San Francisco Marriott

Talk Presentation
Symposium CC
Monday, April 13, 4:30 p.m.
Room: Pacific A

Plenary Session

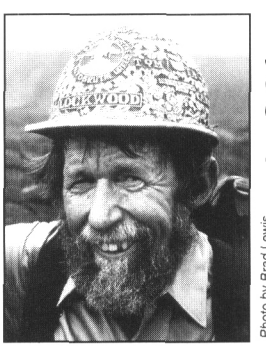

Photo by Brad Lewis

John P. Lockwood
Consulting Volcanologist
Geohazards Consultants International, Inc.

"Volcanoes: The Ultimate Materials Source"

Talk Presentation
Monday, April 13, 6:00 p.m.
Salon 7, San Francisco Marriott

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MRS 1998 SPRING MEETING SESSION LOCATOR

SYMPOSIUM	LOCATION	MONDAY, APRIL 13 a.m.	MONDAY, APRIL 13 p.m.	MONDAY, APRIL 13 eve.	TUESDAY, APRIL 14 a.m.	TUESDAY, APRIL 14 p.m.	TUESDAY, APRIL 14 eve.*
A: Amorphous & Microcrystalline Silicon Technology - 1998	Salon 7	***Tutorial Session*** **SALON 11/12**	***Tutorial Session*** **SALON 11/12**		A1/B1: Amorphous & Poly-Si TFTs A2/B2: Amorphous Silicon and Processing for Displays	A3: Color and X-Ray Sensors A4: Material Physics	A5, A6, A7, A8, A9: Posters
B: Flat-Panel-Display Materials and Large-Area Processes	Nob Hill B		***Tutorial Session***		B1/A1: Amorphous & Poly-Si TFTs **SALON 7** B2/A2: Amorphous Silicon and Processing for Displays **SALON 7**	B3: Polysilicon TFTs and Crystallization	
C: Materials Issues in Vacuum Microelectronics	Nob Hill C		***Tutorial Session***		C1: Gated Cathode Arrays C2: Si Cathode	C3: Cathode Materials C4: Wide Bandgap Cathode	
D: Defect & Impurity Engineered Semiconductors and Devices II	Golden Gate B2	D1: Grown-In Defects in Bulk Crystals D2: Doping Issues - I	D3: Doping Issues - II D4: Grown-In Defects in Epitaxial Layers		D5: Doping & Defect Issues in Widegap Semiconductors	D6: Process-Induced Defects & Gettering	
E: Low-Dielectric Constant Materials & Applications in Microelectronics II	Pacific H				E1: Low-k Oxides and Glasses	E2: Polymeric and Inorganic Low-k Materials	
F: Wide-Bandgap Semicond. for High Power, High Freq. & High Temperature	Golden Gate C2	F1: GaN Materials and Devices	F2: Crystal Growth		F3: SiC Materials & Devices	F4: Characterization of Wide-Bandgap Semiconductors	F5: Posters
G: Science & Tech. of Organic Electroluminescent Devices ***Sunday Tutorial Session****	Nob Hill D	G1: New Materials for OLEDs I	G2: New Materials for OLEDs II G3: Characterization and Failure Analysis		G4: Organic LED Displays G5: Posters	G6: Novel Device Processing G7: Posters	G8: Posters
H: Hydrogen in Semiconductors and Metals	Golden Gate B3	H1: Plenary Session H2: Hydrogen on Surfaces	H3: Theory and Thermodynamics		H4: Hydrogen Transport Phenomena	H5: Nuclear Characterization Techniques & Diffusion Studies	
I: Advanced Interconnects & Contact Materials & Processes for Future ICs	Salon 11/12	I1: Interconnect Frontiers - I **SALON 7**	I2: Interconnect Frontiers - II **SALON 7**		I3: Aluminum Interconnects	I4: Cobalt & Other Silicides	
J: Electronic Packaging Materials Science X	Salon 1				J1: Interfacial Behavior - I	J2: Interfacial Behavior - II	
K: Materials Reliability in Microelectronics VIII	Golden Gate A1	K1: Novel Measurement Techniques	K2: Microstructural Effects		K3: Reliability Modeling	K4: Stress Effects	
L: Materials for High-Density Magnetic Recording ***Sunday Tutorial Session****	Salon 2	L1: High-Moment Pole Matls. L2: AMR, GMR and Exchange Matls. - I	L3: AMR, GMR and Exchange Matls. - II L4: Spin Tunnel Junctions		L5: CMR Materials	L6/T4: Nanotribology of Wear Layers for Magnetic Recording Media	
M: Integrated Magneto-Optics—Matls. & Devices	Pacific C	M1: Garnet Materials for Integrated Photonics—Fabrication and Processing	M2: Garnet Materials—Devices for Integrated Photonics		M3: Magneto-Optic Recording Media—Materials and Devices	M4: Diluted Magnetic Semiconductors and Other Materials	M5: Posters
N: Microelectromechanical Structures for Matls. Res.	Pacific I						
O: Hybrid Materials	Golden Gate A2	O1: Molec. Designed Hybrid Matls.—Hybrid Matls. Designed from Nanobuilding Blocks - I	O2: Molec. Designed Hybrid Matls.—Hybrid Matls. Designed from Nanobuilding Blocks - II		O3: Templated Growth—Self Assembling & Related Synthetic Approaches to Hybrids - I	O4: Templated Growth—Self Assemb. & Related Synthetic Approaches to Hybrids - II	
P: Chemical & Pyrolytic Rtes. to Nanostruc. Powders & Their Industrial Application	Salon 15	P1: Overview of Nanoparticle Technology	P2: Physical Aspects of Nanostructured Powders		P3: Industrial Aerogel Synthesis	P4: Multicomponent Powders	P5: Posters
Q: Materials Issues in Chem.-Mechanical Polishing	Pacific J						
R: Porous & Cellular Materials for Structural Applications	Nob Hill A	R1: Mechanical Behavior of Solid Foams—Theory and General Observations	R2: Mechanical Properties of Metallic Foams		R3: Manufacture of Solid Foams	R4: Thermal Properties of Solid Foams R5: Other Foam Matls. & Proc.	
S: Nanoscale Materials Characterization Using Scanning Probes	Salon 5/6	***Tutorial Session***	***Tutorial Session***		S1: STM, BEEM, XSTM	S2: Novel SPM & Magnetic for Microscopy	
T: Fundamentals of Nanoindentation & Nanotribology ***Sunday Tutorial Session****	Salon 3/4	T1: Theory and Techniques	T2: Deformation		T3: Polymers	T4/L6: Nanotribology of Wear Layers for Recording Media	T5: Posters
U: Electron Microscopy of Semiconducting Materials & ULSI Devices	Pacific C						
V: Applic. of Synchr. Radiation Tech. to Matls. Science	Salon 13	V1: Photoemission	V2: X-Ray Absorption Spectroscopy - I		V3: X-Ray Microscopy	V4: Magnetic and X-Ray Scattering Techniques	V5: Posters
W: Rapid Thermal and Integrated Processing VII	Salon 10	W1: RTP Equipment & Modeling	W2: Temperature Measurement & New Concepts in RTP Equipment		W3: MOSFET Gate Stack Engineering— Ultrathin Gate Dielectrics	W4: MOSFET Gate/Stack Engineering—Gate Electrodes W5: MOSFET Srce/Drain Eng.—Shallow Junc. By Ion-Implant.	
X: Frontiers of Materials Research	Salon 7		X1			X2	
Y: Advances in Laser Ablation of Materials	Golden Gate B1	Y1: Fundamentals of Ablation Y2: Fundamentals of Pulsed, Hyperthermal Growth	Y3: *In Situ* Diagnostics and Nanoscale Synthesis		Y4: Pulsed Laser Deposition of High-Temperature Superconductors	Y5: (Special)—10Th Anniv. of Pulsed Laser Depos. of High-Tc Films & Future Direc. Y6: Novel Materials and Appl.	
Z: Diffusion Mechanisms in Crystalline Materials	Golden Gate C1	Z1: Diffusion Mechanisms in Metals and Alloys	Z2: Effect of Pressure and Stress on Diffusion Z3: Diffus. in Intermet. Comp. - I		Z4: Diffusion in Intermetallic Compounds - II	Z5: Diffusion Along Grain Boundaries and Dislocations—Diffusion in Quasicrystals	Z6: Posters
AA : Mech. & Princ. of Epitaxial Growth in Metallic Systems	Pacific I	AA1: Alloying and Effects of Impurities	AA2: Island Distribution		AA3: Strain & Dislocation Growth AA4: Sputt.-& Ion-Assis. Depos.	AA5: Surface Diffusion	AA6: Posters
BB: Computational & Mathematical Models of Microstructural Evolution	Golden Gate A3				BB1: Mathematics of Microstructure Stability & Evol.	BB2: Phase Filed Models - I BB3: Cellular Autom. Models	
CC: Biomaterials Regulating Cell Function & Tissue Develop.	Pacific A	CC1: Biomaterials in Tissue Engineering	CC2: Control. Cell Interac. with Biomat. Chem.or Surface Prop. **4:30 PM Outstanding Young Investigator Oral Presentation**		CC3: Orthopedic Applications of Cell Interactive Biomaterials		
DD: Reliability of Photonics Materials and Structures	Salon 14	DD1: Review Presentations	DD2: Materials Reliability - I		DD3: Materials Reliability - II	DD4: Strength Degradation, Fatigue and Aging	
EE: Silicon Front-End Tech.—Matls. Processing & Model.	Pacific J	EE1: Shallow Junctions and Transient Enhanced Diffusion	EE2: Extended Defects and Transient Enhanced Diffusion		EE3: Impurities and Point Defects	EE4: Implant Technology, Thin Films and Surfaces	
FF: Epitaxy and Applications of Si-Based Heterostructures	Golden Gate C3	FF1: Technologies and Devices	FF2: Devices, Proc. & Charac. FF3: Posters		FF4: Photonics and Optoelectronics	FF5: Epitaxy of Quant. Struc. FF6: Posters	

Evening Poster Session: Salon 7 Shaded Blocks: No Session

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WEDNESDAY, APRIL 15			THURSDAY, APRIL 16			FRIDAY, APRIL 17	
a.m.	p.m.	eve.*	a.m.	p.m.	eve.*	a.m.	p.m.
A10: Parameter Extraction for *Device Modeling* A11: Solar Cells	A12: Metastability A13: Metastability		A14: Heterogeneous Materials I — Formation Mechanism A15: Heterogeneous Materials II — Bridge to Devices	A16: Growth I A17: Alloys and Luminescence	A18, A19, A20, A21, A22: Posters	A23: Novel Devices A24: Growth II	
B4/C5: Field Emission Cathodes and Displays I B5/C6: Field Emission Cathodes and Displays II	B6/C7: Carbon Field Emission Cathode I *B7: Thin-Film Phosphors and* Degradation		B8: Novel Displays and Materials/Display Fabrication	B9: TFT LCD Materials	B10: Posters	B11: EL Displays and Phosphors	
C5/B4: Field Emission Cathodes and Displays I C6/B5: Field Emission Cathodes and Displays II	C7/B6: Carbon Field Emission Cathode I C8: Carbon Cathode II	C9: Posters	C10: Carbon Cathode III C11: Carbon Cathode IV				
D7: Defect Properties, Reactions, Activation & Passivation	***Tutorial Session*** **		D8: Ion Implantation & Irradiation Effects	D9: *Defects in Devices* D10: Plasma Processing	D11,D12, D13, D14, D15, D16: Posters	*D17: Defect Characterization* D18: Interfaces, Quantum Wells, Superlattices	
E3: Metrology for Low-k Dielectrics	E4/K6: Reliability of Low-k Interconnects - I **GOLDEN GATE A1** E5: Reliability of Low-k Interconnects - II		E6: Process Integration of Low-k Dielectrics	E7: Process Development for Low-k Dielectrics			
F6: Charac. & Processing of Wide-Bandgap Materials - I	F7: Characterization and Processing of Wide-Bandgap Materials - II						
G9: Prospects for Organic Diode Lasers	G10: Organic LED Device Physics						
H6: Compound Semiconductors	H7: Metal Films, Superlattices, and Surfaces	H8: Posters	H9: Devices and Applications	H10: Bulk Silicon		H11: Carbon and Carbon-Like Materials	
I5: Titanium Silicide J6/W7: MOSFET, Source, Drain and Interconnect Engineering	I7: Copper Interconnects and Barriers	I8: Posters	I9: Contacts to Compound Semiconductor Devices I10: Novel Interconnect Materials and Schemes	I11: Diffusion Barriers			
J3: Flip-Chip Interconnections	J4: High-Density Substrates		J5: Thermomechanical Behavior	J6/K8: Packaging Reliab. Issues ***GOLDEN GATE A1***			
K5: Advanced Interconnect Reliability	K6/E4: Reliability of Low-k Interconnects		K7: Adhesion & Fracture	K8/J6: Packaging Reliab. Issues	K9: Posters		
L7: Tribology, Lubricants and Corrosion	L8: Microstructural Issues in Longitudinal Recording Media	L9: Posters	L10: Thermal Stability of Magnetic Recording Media	L11: Perpendicular Magnetic Media and Novel Structures			
M							
N1	*N2*		*N3*	*N4*			
O5: Advanced Characterization *Methods*	O6: Hybrid Biomaterials O7: Electrical, Optical & *Electrochem. Properties of Hybrids*	O8: Posters	O9: Electrical and Optical and Electrochemical Properties of *Hybrids*	O10: Mechanical Properties and Processing of Hybrids - I		O11: Mechanical Properties and Processing of Hybrids - II	O12: Open Disc.—Oppor. *in Hybrid Matl.*
P6: Exfoliated Clays and Other Polymer Applications	P7: Catalysts/Separation						
Q1	Q 2		Q3: **NOB HILL A** Q4: Posters **NOB HILL A**	Q5: **NOB HILL A**			
R6: HICE-Based Materials R7: Application and Design Principles	R8: GASAR Materials						
S3: Near-Field Scanning Optical Microscopy	S4: SCM, EFM, & Kelvin Probe Microscopy	S5: Posters	S6: SFM	S7/T9: Novel Force Microscopy			
T6: Thin Films and Multilayers	T7: Adhesion and Fracture		T8: Friction and Wear	T9/S7: Novel Force Microscopy	T10: Posters		
U1: *Specimen Preparation and* Defect Analysis in Semiconducting Devices	*U2: Metallization Silicides and* Diffusion Barriers		U3: Advanced Characterization of ULSI Structures	U4: Semiconductor Epitaxy and Heterostructures			
V6: Grazing Incidence X-Ray (GIX) Techniques V7 : X-Ray Diffraction (XRD)	V8: X-Ray Absorp. Spectroscopy - II		V9: Topography V10: Microphotoemission	V11: General - I V12: General - II		V13: X-Ray Absorp. Spectroscopy - III	
W6: MOSFET Channel & Source/Drain Engineering W7/I6: MOSFET, Source, Drain and Interconnect Engineering	W8: New Applications of RTP						
X	*X3*			*X4*			
Y7: Optoelectronic Nitrides and Oxides	Y8: Critical Issues in Ferroelectrics Y9: Magnetic Films		Y10: C, Cn_x, and Hard Materials	Y11: Adv. in Laser Ablation Techniques Y12: Laser Surface Processing	Y13: Posters		
Z7/EE5: Point Defects and Diffusion in Si and SiGe	Z8: Diffusion in Semiconductors	Z9: Posters	Z10: Diffusion and Ionic Conductivity in Ionic Materials.				
AA							
BB4: Computation of Interface Motion and Solidification BB5: Phase Filed Models - II	BB6: Thin-Film Growth and Annealing *BB7: Computation of Mechanical* Properties	BB8: Posters	BB9: Multiscale Models BB10: Atomistic Calculations *BB11: Posters*	BB12: Monte Carlo and Discrete Particle Simulations BB13: Hybrid Models of Microstructure Development			
CC							
DD5: Structural Analysis and Modeling	DD6: High-Strength and Metallized Fibers		DD7: Perform. in Harsh Environs. DD8: Photonic Devices and *Reliability of Opt. Performance - I*	DD9: Photonic Devices and Reliab. of Opt. Perform. - II			
EE5/Z8: Point Defects and Diffusion in Si and SiGe **GOLDEN GATE C1**							
FF7: SiGeC Alloys	FF8: Epitax. of SiGe & Related Matl. FF9: Posters						

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MRS 1998 Spring Meeting
San Francisco, CA

Lodging & Travel

A block of rooms has been reserved for MRS meeting attendees at the San Francisco Marriott Hotel (30 minutes from the San Francisco International Airport). When making your reservations, mention the Materials Research Society to receive the special rate.

DEADLINE FOR HOTEL RESERVATIONS: March 8, 1998

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55 Fourth Street
San Francisco, CA 94103

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415-442-0141 Fax Reservations
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Airline Transportation

Due to recent changes in the airline industry, it is recommended you check with your preferred airline carrier or travel agent when making 1998 Spring Meeting travel arrangements.

Local Transportation

The San Francisco Airporter service is available between the airport and downtown San Francisco hotels.

Parking

Parking is available at the San Francisco Marriott and nearby public facilities.

Child Care

Check with the Concierge Desk for a comprehensive roster of licensed and bonded sitters.

Symposium Tutorials

Sunday • April 12	Monday • April 13	Wednesday • April 15
Symposium G 1:00 p.m. – 5:00 p.m. **STG: Organic Light-Emitting Diodes** Room: Pacific H	**Symposium A** 8:30 a.m. – 4:30 p.m. **STA: Amorphus Silicon Materials and Devices for Large-Area Electronics** Room: Salon 11/12	**Symposium D** 1:30 p.m. – 5:00 p.m. **STD: Defects/Impurities and Gettering in Silicon Science and Technology** Room: Golden Gate B2
Symposium L 1:30 p.m. – 4:30 p.m. **STL: Physics and Materials for Ultrahigh-Density Recording** Room: Pacific I	**Symposia B/C** 1:30 p.m. – 5:00 p.m. **STB/C: Flat Panel Display Materials and Large-Area Processing** Room: Nob Hill B/C	
Symposium T 1:00 p.m. – 5:00 p.m. **STT: Measuring Mechanical Properties in the Nanometer Regime** Room: Pacific J	**Symposium S** 8:00 a.m. – 4:00 p.m. **STS: Basic Principles and Applications of Scanning Probe Microscopy** Room: Salon 5/6	

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SPRING MEETING

98

APRIL 13-17

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C: Materials Issues in Vacuum Microelectronics
Editors: W. Zhu, L.S. Pan, T.E. Felter, C. Holland
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D: Defect and Impurity Engineered Semiconductors and Devices II
Editors: S. Ashok, J. Chevallier, K. Sumino, B.L. Sopori, W. Goetz
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$59.00	$71.00	MRS Member
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E: Low-Dielectric Constant Materials IV
Editors: C. Chiang, J.T. Wetzel, T-M. Lu, P.S. Ho
ISBN: 1-55899-417-3 Code: 511-B

$52.00	$63.00	MRS Member
$60.00	$72.00	U.S. List
$69.00	$83.00	Non-U.S.

F: Wide-Bandgap Semiconductors for High Power, High Frequency and High Temperature
Editors: S. Denbaars, M.S. Shur, J. Palmour, M. Spencer
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MRS 1998 Spring Exhibit

San Francisco Marriott Hotel
Salon 8 and 9
April 14-16, 1998

Exhibit Hours:

Tuesday, April 14	11:30 a.m. - 6:30 p.m.
Wednesday, April 15	9:30 a.m. - 6:00 p.m.
Thursday, April 16	9:30 a.m. - 1:30 p.m.

Complimentary reception will be held in the exhibit hall on Tuesday evening from 5:00 pm to 6:30 pm.

The MRS Exhibit, held in conjunction with the 1998 MRS Spring Meeting, will encompass the full spectrum of equipment, instrumentation, products, software, publications and services for materials research. As always, the exhibit will closely parallel the nature of the technical symposia, and the program has been arranged to allow meeting participants ample opportunity to visit the exhibit. MRS encourages attendees to visit the exhibit by scheduling coffee breaks, deli-style lunches, and a meeting-wide reception in the exhibit hall.

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